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53. *SEPTORIA GAURINA*, E. & Kellerman. Am. Nat. XVII, p. 1,165; Ellis, N. A. F., No. 1,133.

Spots light, dusky brown, rather irregular, border definite, slightly raised; perithecia numerous; brown; immersed, 100—140 μ in diam., visible on both surfaces of the leaves, but expelling the sporulæ in white threads upon the upper; sporules linear, curved, yellowish, granular, continuous or 1—3-septate, 50—75 x 2½—3 μ . On leaves of *Gaura pariflora*. Kansas.

54. *SEPTORIA MACULOSA*, Ger. Bull. Torr. Bot. Club IV, p. 64.

Spots grey or tawny, subcircular or elongated, three millim. broad; perithecia black, subglobose, innate, prominent, densely clustered in the center of the spot, epiphyllous, 84 μ in diam.; sporules hyaline, filiform slightly curved, 25—40 x 1½ μ . On leaves of *Cupbua viscosissima*. New York and Pennsylvania. This species appears to differ in the arrangement of the perithecia and in the size and appearance of the sporules from *S. maculosa*, Lev.; Sylloge III, p. 513.

(To be continued.)

NOTES ON THE BOLETI OF THE UNITED STATES.

BY CHAS. H. PECK.

Fries, in *Hymenomycetes Europæi*, gives descriptions of ninety species of *Boleti* and adds, in an appendix, the diagnoses of ten more whose affinities are doubtful. Almost as many species have been recorded for this country, and probably when they shall have been as thoroughly collected and studied here as they have been in Europe the number of United States species will exceed the number of the European.

Fries makes the remark, "Nullum genus quam Boletorum magis me molestavit:" "No genus has troubled me more than that of the *Boleti*;" and he indicates in the context that one cause of the trouble was the imperfect manner in which many species had been described. In my efforts to write a monograph of the American species, I have encountered the same difficulty and, unless more information can be obtained concerning some species than is afforded by the descriptions of them, it will be necessary to follow the example of Fries and add an appendix of species of doubtful affinity. Among these may be mentioned *B. betula*, Schw., *B. Murrainii*, B. & C., and *B. alboater*, Schw. Fries refers the first one to *B. parasiticus*, Bull., but the viscose pileus, the stem with a reticulated bark, separating like the bark of birches, and the habitat on lignose earth, cast a doubt on the accuracy of this reference. *B. Murrainii* is said to have spores pale yellow, as in *P. castaneus*. This would indicate an affinity with the *Cariosi*, but the internal character of the stem is not indicated. If it shall prove to be stuffed or excavated, all doubt concerning its relationship will be removed.

To the description of *B. decipiens*, B. & C., is added the remark that its affinities are clearly with *B. flavidus* and its allies; but its dry pileus would exclude it from the *Viscipelles*, to which *B. flavidus* belongs. If there is no mistake in the description, the remark is misleading. I suspect it belongs to a very different group from *B. flavidus*. It is also said to be so much like *Paxillus porosus*, Berk., when dry, that it is scarcely distinguishable without examination of the spores. Now *Paxillus porosus* has the stem eccentric or lateral in its attachment to the pileus, and I have been kindly informed by Mr. Ravenel, who has collected *B. decipiens*, that it also sometimes has the stem eccentric or even lateral. The forms with central stems appear to be a good *Boletus*, but what shall we say of the other forms? They certainly are full of significance. They make the connection between *Boletus* and *Paxillus* (if *P. porosus* is a good *Paxillus*) too intimate to be comfortable. The assertion of Fries that *Boletus* is a sharply defined genus loses much of its force. We can no longer depend upon the spores of *P. porosus* to separate it from the *Boleti*, for *B. spærocephalus*, Barla., has ovoid spores and *B. sphærosporus*, Pk., has subglobose spores. Nor can we rely on its eccentric or lateral stem, for *B. decipiens* obliterates this character. I see but two ways out of the dilemma, either of which will necessitate the removal of *P. porosus* from among the *Paxilli*. One is to refer both *P. porosus* and *B. decipiens* to a distinct genus; the other is to extend the characters of *Boletus* by inserting after the word "central" the words "or rarely eccentric or lateral." It is barely possible that Kalchbrenner's genus *Boletinus* may help us out of the difficulty, but the character on which it is founded is abstruse and needs confirmation. It should be sought in the two species under consideration, also in *B. pictus*, Pk., *B. paluster*, Pk., and in *B. ampliporus*, Pk., which last species is very closely allied to if not identical with *B. cavipes*, the type species of *Boletinus*. The trama which characterizes *Boletinus* is not satisfactorily shown in the dried specimens which I have examined. The character of the hymenium is very similar in all the species indicated above. *B. Russellii*, Frost, and *B. Morgani*, Pk., constitute a distinct group, *Laceripedes*, not recognized by Fries and thus far peculiar to this country. *B. alveolatus*, B. & C., as described by Frost in Bull. Buf. Soc. Nat. Sci., June, 1874, p. 102, appears to connect this group with the *Luridi*, to which it evidently belongs, as shown by the maroon-colored mouths of the tubes, although in Grev., Vol. I, p. 36, *B. alveolatus*, B. & C., is affirmed to be either *B. edulis* or very nearly allied to it.

B. Spraguei, Frost, is not sufficiently distinct from *B. vermiculosis*, Pk. The name of *B. robustus*, Frost, must be changed, inasmuch as it clashes with *B. robustus*, Fr. The Frostian plant is well marked, constant in its characters and very easily recognized. It merits the name—

BOLETUS EXIMIUS.—Pilius at first very compact, subglobose or hemispherical, subpruinose, purplish-brown or chocolate color, some-

times with a faint tinge of lilac, then convex, soft, paler, becoming smoky-red or pale chestnut color, flesh reddish-white or grayish, tubes at first concave or nearly plane, stuffed, colored nearly like the pileus, at length paler, depressed around the stem, minute, round; stem stout, generally short, equal or slightly tapering upward, abruptly narrowed at the base, minutely furfuraceous, colored like or a little paler than the pileus, purplish-gray within; spores subferruginous, .00045 to .0006 in. long, .0002 to .00025 in. broad; pileus 3—10 in. broad, stem 2—4 in. long 6—12 lines thick. Woods and their borders. July to September. It belongs to the section *Edules*.

NEW SPECIES OF USTILAGINEÆ AND UREDINEÆ.

BY J. B. ELLIS AND B. M. EVERHART.

We have received from Prof. F. L. Scribner, of the Department of Agriculture, Washington, D. C., samples of several grasses, from the Rocky mountain region, infested with forms of *Ustilagineæ*, which we have not been able to refer satisfactorily to any published species and which we describe provisionally as new. Two *Puccinias* sent from Washington Territory by Mr. Suksdorf and an *Ustilaga* sent from Missouri by B. T. Galloway are also included.

TILLETTIA FUSCA, E. & E. (N. A. F., 1,895).—In ovaries of *Festuca microstachys*. Spores mostly globose, 19—22 μ or occasionally subovate, subelongated or otherwise irregular in shape, the surface covered with subhexagonal reticulations bounded by rather thick walls, about 1½ μ high, overspread and partially hidden by a dirty, subhyaline (gelatinous?) layer, which envelops the dark brown body of the spores, through which the projecting walls of the reticulations are scarcely prominent. *T. sphærococca*, Fisch., and *T. Rauvenhoffii*, Fisch., have rather paler, larger spores, with larger and more prominent reticulations.

TILLETTIA MONTANA, E. & E.—In ovaries of *Sporobolus gracillimus*. Spores globose, 19—22 μ , or suboval, subelongated, 18—25 μ ; epispore, consisting of two layers, the outer one hyaline, about 2½ μ thick, entirely covering the reticulations, which have thinner walls and are rather more irregular in shape than in the preceding species; the body of the spore is also lighter colored.

TILLETTIA ASPERIFOLIA, E. & E.—In ovaries of *Sporobolus asperifolius*, has spores globose or subglobose, 17—20 μ , pale brown; hyaline envelope about two μ thick; reticulations subhexagonal or of irregular shape, with rather thick walls which rise through but hardly project above the surface of the enveloping, hyaline coat. Differs from both the preceding in its smaller spores and from the last also in the thicker walls of its reticulations, but is closely allied to the first-described species (*T. fusca*) which, however, has darker-colored spores.